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## RAW SEQUENCE LISTING

DATE: 06/25/2001

PATENT APPLICATION: US/09/872,523

TIME: 12:44:25

Input Set : A:\01997.536002.SEQLIST.TXT

Output Set: N:\CRF3\06252001\I872523.raw

ENTERED

4 <110> APPLICANT: Horvitz, H. Robert  
 5 Davison, Ewa M.  
 6 Lu, Xiaowei  
 8 <120> TITLE OF INVENTION: A Tumor Suppressor Pathway in C. Elegans  
 11 <130> FILE REFERENCE: 01997/536002  
 C--> 13 <140> CURRENT APPLICATION NUMBER: US/09/872,523  
 C--> 13 <141> CURRENT FILING DATE: 2001-06-01  
 13 <150> PRIOR APPLICATION NUMBER: US 60/208,802  
 14 <151> PRIOR FILING DATE: 2000-06-02  
 16 <160> NUMBER OF SEQ ID NOS: 78  
 18 <170> SOFTWARE: FastSEQ for Windows Version 4.0  
 20 <210> SEQ ID NO: 1  
 21 <211> LENGTH: 386  
 22 <212> TYPE: PRT  
 23 <213> ORGANISM: Caenorhabditis elegans  
 25 <400> SEQUENCE: 1  
 26 Met Ser Lys Ile Lys Thr His Ser Thr Gly Ser Lys Arg Thr Val Pro  
 27 1 5 10 15  
 28 Phe Tyr Lys Leu Pro Pro Pro Val Pro Leu Pro Pro Leu Pro Pro Pro  
 29 20 25 30  
 30 Asp Pro Thr Arg Tyr Phe Ser Thr Glu Lys Tyr Ile Ala Leu Ser Lys  
 31 35 40 45  
 32 Asp Glu Lys Phe Lys Phe Asp Asp Tyr Asp Val Asn Asp Glu Thr Leu  
 33 50 55 60  
 34 Lys Lys Val Val Leu Asn Glu Ile Gly Lys Cys Pro Asp Ile Trp Ser  
 35 65 70 75 80  
 36 Ser Arg Ser Gln Ala Ala Ile Met Glu His Tyr Pro Ile Val Ala Thr  
 37 85 90 95  
 38 Glu Thr Tyr Arg Arg Thr Gly Leu Leu Leu Ser Ile Lys Ser Leu Lys  
 39 100 105 110  
 40 Gln Ile Tyr Lys Cys Gly Lys Asp Asn Leu Arg Asn Arg Leu Arg Val  
 41 115 120 125  
 42 Ala Ile Val Ser Lys Arg Leu Thr Pro Ala Gln Val Glu Ala Tyr Met  
 43 130 135 140  
 44 Trp Arg Trp Glu Phe Tyr Gly Phe Ile Arg Tyr Tyr Arg Asp Tyr Thr  
 45 145 150 155 160  
 46 Gln Arg Trp Glu Ala Asp Leu Leu Lys Asp Leu Asp Val Val Leu Gly  
 47 165 170 175  
 48 Leu Glu Ala Arg Arg Ala Ser Lys Asn Met Glu Lys Val Asp Ser Gly  
 49 180 185 190  
 50 Glu Leu Met Glu Pro Met Glu Pro Met Asp Ser Thr Met Asp Glu Met  
 51 195 200 205  
 52 Cys Val Glu Glu Glu Pro Tyr Glu Glu Thr Gly Ser Asn Trp Ser Asp  
 53 210 215 220  
 54 Pro Ala Pro Glu Pro Ser Gln Ser Lys Ser Gln Ser Pro Glu Ala Lys  
 55 225 230 235 240  
 56 Tyr Pro Gln Ala Tyr Leu Leu Pro Glu Ala Asp Glu Val Tyr Asn Pro

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57           245           250           255
58 Asp Asp Phe Tyr Gln Glu Glu His Glu Ser Ala Ser Asn Ala Met Tyr
59           260           265           270
60 Arg Ile Ala Phe Ser Gln Gln Tyr Gly Gly Gly Gly Ser Pro Ala Val
61           275           280           285
62 Gln Lys Pro Val Thr Phe Ser Ala Gln Pro Ala Pro Ala Pro Val Arg
63           290           295           300
64 Glu Ala Pro Ser Pro Val Val Glu Asn Val Ser Ser Ser Ser Phe Thr
65 305           310           315           320
66 Pro Lys Pro Pro Ala Met Ile Asn Asn Phe Gly Glu Glu Met Asn Gln
67           325           330           335
68 Ile Thr Tyr Gln Ala Ile Arg Ile Ala Arg Glu Gln Pro Glu Arg Leu
69           340           345           350
70 Lys Leu Leu Arg Lys Ala Leu Phe Asp Val Val Leu Ala Phe Asp Gln
71           355           360           365
72 Lys Glu Tyr Ala Asp Val Gly Asp Leu Tyr Arg Asp Leu Ala Gln Lys
73           370           375           380
74 Asn Ser
75 385

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78 &lt;210&gt; SEQ ID NO: 2

79 &lt;211&gt; LENGTH: 1276

80 &lt;212&gt; TYPE: DNA

81 &lt;213&gt; ORGANISM: Caenorhabditis elegans

83 &lt;400&gt; SEQUENCE: 2

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84 agaatctgcc aaaatgtcaa agataaagac acattccact ggctcaaaac ggacggtacc 60
85 attctacaag ctgccaccgc ccgtgccact tccaccactc ccgccaccgc atccaaccgc 120
86 gtacttctcg acggaaaagt acatcgcaat gagcaaagat gagaaattca aatttgatga 180
87 ttacgatgtg aatgatgaga cgtgaaaaa agtgggtgctc aacgagattg gcaagtgcc 240
88 ggatatttgg agctcgcgga gccaggcagc cattatggag cactatccga ttgttgcaac 300
89 tgaacgtagc aggaggacag ggttgctggt gtctatcaaa tcgctgaaac aaatctacaa 360
90 atgcggaaag gacaatctcc gaaaccggct tcgctgggca attgtaagca agcggcttac 420
91 accggcccaa gtagaggcct atatgtggcg ctgggagttt tacggcttta ttcgctacta 480
92 tcgagactat acacaacgct gggaggccga cttgttgaaa gatttggaag tgggtgctcg 540
93 gctcgaggct cggcgagcat cgaaaaatat ggaaaagggtg gattctgggg agctcatgga 600
94 gcccatggag cccatggatt ctacaatgga tgagatgtgc gtcgaggagg agccctacga 660
95 ggagacaggg tccaattgga gcgatccggc gccggaacca tccaatcca aatcccagtc 720
96 ccagaagcc aagtaccctc aagcctacct actacctgag gcggacgaag tctacaatcc 780
97 tgacgatttc tatcaagagg aacatgaatc cgcatacaac gccatgtatc ggatcgcttt 840
98 ctacagcagc tacggtggcg gcgggtcccc agccgtgcag aagcccgtca cttttagtgc 900
99 tcagccggcg ccggcgccag ttagagaggc cccaagccca gttgtggaga atgttagttc 960
100 atcgagtttc accccgaagc ccccgcccat gatcaacaat tttggtgagg agatgaacca 1020
101 aataacatac caagcgatcc gtattgccc agagcagccg gaacgtctga aattgctccg 1080
102 taaggcactt ttcgacgttg tctggcggt tgatcagaag gaatacgccg atgttgggga 1140
103 tttgtacagg gatttggcgc aaaagaattc gtgataattt ttttttgagt tttttaattt 1200
104 ttaattttatt tcaatttttg ttacatgttc caatataata aacaggtgct tgtttaaaaa 1260
105 aaaaaaaaaa aaaaaa
106

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107 &lt;210&gt; SEQ ID NO: 3

108 &lt;211&gt; LENGTH: 322

109 &lt;212&gt; TYPE: PRT

## RAW SEQUENCE LISTING

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Input Set : A:\01997.536002.SEQLIST.TXT

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110 <213> ORGANISM: Caenorhabditis elegans
112 <400> SEQUENCE: 3
113 Met Asp His His Ala Met Tyr Arg Thr Ala Glu Phe Asn Lys Thr Thr
114 1 5 10 15
115 Val Arg Leu Leu Ala Glu Phe Ile Glu Lys Thr Gly Gln Asn Ala Thr
116 20 25 30
117 Ile Val Asn Met Asp Ser Phe Leu Glu Phe Phe Ala Tyr Leu Asn Pro
118 35 40 45
119 Thr Ala Pro Ile Pro Thr Val Pro Glu Ile Glu Lys Gln Leu Leu Leu
120 50 55 60
121 Lys Ser Pro Ile Arg Cys Ile Val Cys Gly Met Glu Thr Glu Ser Asp
122 65 70 75 80
123 Ser Ala Val Thr Leu Ser Ile Asp Asn Ala Ser Ile Ile Leu Thr Ala
124 85 90 95
125 Thr Val Ile Gly Tyr Cys Arg Asp Pro Ser Asp Ala Val Asn Gln Ile
126 100 105 110
127 Arg Lys Glu Ser Leu Arg Ala Cys Thr Lys His Phe Asn Ser Ile Phe
128 115 120 125
129 His Val Ile Phe Glu Gly Leu Gln Ile Glu Asn Thr Tyr Cys Ala His
130 130 135 140
131 His Ala Lys Tyr Ser Leu Ala Asn Arg Trp Cys Lys Val Tyr Thr Met
132 145 150 155 160
133 Ile Arg Ser Ser Leu Gly Glu Gln Phe Thr Lys Phe Asp Val Arg Asn
134 165 170 175
135 Phe Lys Ser Ile Leu Gln Ser Phe Leu Asp Thr Phe Gly Glu Ile Asp
136 180 185 190
137 Asp Asp Lys Lys Asp Lys Glu Ser Ser His Phe Asp Glu Cys Phe Glu
138 195 200 205
139 Glu Met Asp Ser Glu Asn Val Glu Ile Lys Met Glu Ser Pro Gln Glu
140 210 215 220
141 Glu Ala Ala Glu Lys Ser Lys Phe Ser Glu Asn Leu Val Glu Val Lys
142 225 230 235 240
143 Leu Glu Pro Ile Glu Thr His Glu Leu Asp Lys Thr Ile Ser Asp Phe
144 245 250 255
145 Ser Ser Ser Asp Ile Ile Asp Ser Ser Gln Lys Leu Gln Gln Asn Gly
146 260 265 270
147 Phe Pro Glu Lys Val Glu Gln Met Asp Lys Tyr Ser Asn Lys Leu Lys
148 275 280 285
149 Asp Glu Ala Ser Asp Lys Lys Tyr Glu Lys Pro Gly Lys Lys Asp Tyr
150 290 295 300
151 Val Glu Glu Glu Gly Tyr Trp Ala Pro Ile Thr Asp Ser Glu Asp Asp
152 305 310 315 320
153 Glu Ala
157 <210> SEQ ID NO: 4
158 <211> LENGTH: 1108
159 <212> TYPE: DNA
160 <213> ORGANISM: Caenorhabditis elegans
162 <400> SEQUENCE: 4
163 gcaaaaaact agatattttg tggcattttt acaattaa aaacctttaaa aaatggatca 60

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Input Set : A:\01997.536002.SEQLIST.TXT

Output Set: N:\CRF3\06252001\I872523.raw

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164 ccatgctatg taccgaaccg ctgaattcaa caaaactact gtccgattat tggcggaatt 120
165 catcgaaaag actgggcaga atgcgacgat agtgaatatg gacagctttt tggagttctt 180
166 tgcgtatttg aatcccacgg ctccaattcc aacggttcca gaaattgaaa aacaattatt 240
167 gctaaaatca ccgattcggt gcattgtgtg tggaaatggaa actgaatcag attccgcagt 300
168 gacattaagc atcgataatg cttcaattat tctcacagcg acagtaattg gttactgtag 360
169 agatccaagt gatgcagtta atcaaattcg aaaggagagt cttcgagcat gcacgaaaca 420
170 tttcaacagt attttccatg tcatcttcga aggactgcaa atcgagaaca cctactgtgc 480
171 tcatcatgca aaatacagtc ttgccaatcg ttggtgcaaa gtctacacga tgattcgatc 540
172 ttccctgggc gagcagttca caaagttcga tgtgcgcaat tttaaatcaa tattgcaatc 600
173 atttttggat acttttgggt aaattgatga cgacaaaaag gataaagaat cttctcattt 660
174 tgatgaatgt tttgaagaaa tggattcaga aaacgtagaa attaaaatgg agagcccaca 720
175 agaagaagct gcagagaaat cgaagttttc tgaaaaccta gtggaggtaa aactggaacc 780
176 aattgaaact catgaacttg acaaaactat atccgacttt tcttcaagtg atataattga 840
177 ttcgtcccaa aaactgcagc aaaatggttt tcttgaaaaa gtggagcaaa tggacaaata 900
178 tagcaacaaa ttgaagatg aagcttcaga caaaaagtat gaaaagccag gaaaaagga 960
179 ctacgttgaa gaagaggat actgggcgcc gatcaccgac agcgaggatg atgaagcctg 1020
180 aatttattta atcaaacgtt ttggaaattt tttttgtttt tgtcaataaa accatataac 1080
181 aataaaaaaa aaaaaaaaaa aactcgag                                     1108

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183 &lt;210&gt; SEQ ID NO: 5

184 &lt;211&gt; LENGTH: 498

185 &lt;212&gt; TYPE: PRT

186 &lt;213&gt; ORGANISM: Caenorhabditis elegans

188 &lt;400&gt; SEQUENCE: 5

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189 Met Ser Glu Phe Leu Lys Ile Val Arg Ala Asn Lys Lys Ser Asp Arg
190 1 5 10 15
191 Lys Leu Asp Lys Thr Tyr Leu Trp Glu Ser Tyr Leu His Gln Phe Glu
192 20 25 30
193 Lys Gly Lys Thr Ser Phe Ile Pro Val Glu Ala Phe Asn Arg Asn Leu
194 35 40 45
195 Thr Val Asn Phe Asn Glu Cys Val Lys Glu Gly Val Ile Phe Glu Thr
196 50 55 60
197 Val Val His Asp Tyr Asp Lys Asn Cys Asp Ser Ile Gln Val Arg Trp
198 65 70 75 80
199 Phe Ala Arg Ile Glu Lys Val Cys Gly Tyr Arg Val Leu Ala Gln Phe
200 85 90 95
201 Ile Gly Ala Asp Thr Lys Phe Trp Leu Asn Ile Leu Ser Asp Asp Met
202 100 105 110
203 Phe Gly Leu Ala Asn Ala Ala Met Ser Asp Pro Asn Met Asp Lys Ile
204 115 120 125
205 Val Tyr Ala Pro Pro Leu Ala Ile Asn Glu Glu Tyr Gln Asn Asp Met
206 130 135 140
207 Val Asn Tyr Val Asn Asn Cys Ile Asp Gly Glu Ile Val Gly Gln Thr
208 145 150 155 160
209 Ser Leu Ser Pro Lys Phe Asp Glu Gly Lys Ala Leu Leu Ser Lys His
210 165 170 175
211 Arg Phe Lys Val Gly Gln Arg Leu Glu Leu Leu Asn Tyr Ser Asn Ser
212 180 185 190
213 Thr Glu Ile Arg Val Ala Arg Ile Gln Glu Ile Cys Gly Arg Arg Met
214 195 200 205

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Output Set: N:\CRF3\06252001\I872523.raw

```

215 Asn Val Ser Ile Thr Lys Lys Asp Phe Pro Glu Ser Leu Pro Asp Ala
216      210      215      220
217 Asp Asp Asp Arg Gln Val Phe Ser Ser Gly Ser Gln Tyr Trp Ile Asp
218 225      230      235      240
219 Glu Gly Ser Phe Phe Ile Phe Pro Val Gly Phe Ala Ala Val Asn Gly
220      245      250      255
221 Tyr Gln Leu Asn Ala Lys Lys Glu Tyr Ile Glu His Thr Asn Lys Ile
222      260      265      270
223 Ala Gln Ala Ile Lys Asn Gly Glu Asn Pro Arg Tyr Asp Ser Asp Asp
224      275      280      285
225 Val Thr Phe Asp Gln Leu Ala Lys Asp Pro Ile Asp Pro Met Ile Trp
226      290      295      300
227 Arg Lys Val Lys Val Gly Gln Lys Phe Glu Leu Ile Asp Pro Leu Ala
228 305      310      315      320
229 Gln Gln Phe Asn Asn Leu His Val Ala Ser Ile Leu Lys Phe Cys Lys
230      325      330      335
231 Thr Glu Gly Tyr Leu Ile Val Gly Met Asp Gly Pro Asp Ala Leu Glu
232      340      345      350
233 Asp Ser Phe Pro Ile His Ile Asn Asn Thr Phe Met Phe Pro Val Gly
234      355      360      365
235 Tyr Ala Glu Lys Tyr Asn Leu Glu Leu Val Pro Pro Asp Glu Phe Lys
236      370      375      380
237 Gly Thr Phe Arg Trp Asp Glu Tyr Leu Glu Lys Glu Ser Ala Glu Thr
238 385      390      395      400
239 Leu Pro Leu Asp Leu Phe Lys Pro Met Pro Ser Gln Glu Arg Leu Asp
240      405      410      415
241 Lys Phe Lys Val Ile Leu Ile Ser Lys Arg Val Gly Leu Arg Leu Glu
242      420      425      430
243 Ala Ala Asp Met Cys Glu Asn Gln Phe Ile Cys Pro Ala Thr Val Lys
244      435      440      445
245 Ser Val His Gly Arg Leu Ile Asn Val Asn Phe Asp Gly Trp Asp Glu
246      450      455      460
247 Glu Phe Asp Glu Leu Tyr Asp Val Asp Ser His Asp Ile Leu Pro Ile
248 465      470      475      480
249 Gly Trp Cys Glu Ala His Ser Tyr Val Leu Gln Pro Pro Lys Lys Tyr
250      485      490      495

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251 Asn Tyr

255 &lt;210&gt; SEQ ID NO: 6

256 &lt;211&gt; LENGTH: 1497

257 &lt;212&gt; TYPE: DNA

258 &lt;213&gt; ORGANISM: Caenorhabditis elegans

260 &lt;400&gt; SEQUENCE: 6

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261 atgtctgaat ttctgaaaat tgtcagagct aacaaaaaat cggacagaaa actcgataag 60
262 acctacttgt gggaatccta tttacatcag ttcgagaaag gaaaaacttc ttctattcca 120
263 gttgaagcat tcaatcgtaa ccttacagtt aattttaacg aatgcgtgaa ggaaggagtt 180
264 atcttcgaaa cagtgggtcca tgattatgac aagaactgcg attcgattca agtcagatgg 240
265 tttgcacgaa ttgaaaaagt ttgcggatac agagttctgg ctcaatttat cggagctgac 300
266 acgaaatttt ggctcaatat tttatcggac gatatgtttg gtttgcaaaa cgccgcaatg 360
267 agtgatccca atatggataa aattgtatat gttccgcccgc ttgcaatcaa cgaagaatac 420

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VERIFICATION SUMMARY

PATENT APPLICATION: US/09/872,523

DATE: 06/25/2001

TIME: 12:44:26

Input Set : A:\01997.536002.SEQLIST.TXT

Output Set: N:\CRF3\06252001\I872523.raw

L:13 M:270 C: Current Application Number differs, Replaced Current Application No

L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:1748 M:300 W: (50) Intentionally skipped Sequence, : Sequence Id (50) SEQUENCE: